

REMARKS/ARGUMENTS

In the Office Action mailed June 4, 2009 (hereinafter "Office Action"), the Office Action rejected claims 1-6, 8, 10-12, 15, 17, 19-31, 33, 35-38, 41-49, 51, 53-55 and 58-71 under 35 U.S.C. § 103. Claims 1, 2, 11, 12, 19-21, 25-26, 30, 35, 36, 43, 59-61, 66-67, 70 and 71 have been amended. Claims 5, 22, 23, 29, 37, 38, 54, 55, 68 and 69 have been cancelled. Claims 72-73 have been added.

Applicants respectfully respond to the Office Action.

I. Claims 1-6, 8, 10-12, 15, 17, 19-31, 33, 35-38, 41-49, 51, 53-55 and 58-71 Rejected Under 35 U.S.C. § 103

Claims 1-6, 8, 10-12, 15, 17, 19-31, 33, 35-38, 41-49, 51, 53-55 and 58-71 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,891,838 to Petite et al. (hereinafter, "Petite") in view of U.S. Patent No. 6,021,492 to May (hereinafter, "May") in view of U.S. Patent Application Publication No. 2003/0083078 to Allison et al. (hereinafter, "Allison") in further view of U.S. Patent No. 6,477,206 to Chatani (hereinafter, "Chatani"). This rejection is respectfully traversed.

The factual inquiries that are relevant in the determination of obviousness are determining the scope and contents of the prior art, ascertaining the differences between the prior art and the claims in issue, resolving the level of ordinary skill in the art, and evaluating evidence of secondary consideration. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 2007 U.S. LEXIS 4745, at **4-5 (2007) (citing Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 17-18 (1966)). As the Board of Patent Appeals and Interferences has recently confirmed, "obviousness requires a suggestion of all limitations in a claim." In re Wada and Murphy, Appeal 2007-3733 (citing CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003)). Moreover, the analysis in support of an obviousness rejection "should be made explicit." KSR, 2007 U.S. LEXIS 4745, at **37. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." Id. (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Applicants respectfully submit that the claims at issue are patentably distinct from the cited references. The cited references do not teach or suggest all of the subject matter in these claims.

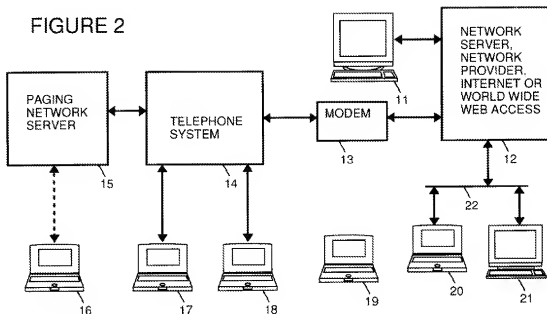
Claim 1 has been amended to recite “a one-way paging module in electronic communication with the processor for communicating with a computer through a paging network.” The Office Action admits that “Petite does not teach a paging module in electronic communication with the processor for communicating with a computer through a paging network” (Office Action, page 4.) The addition of May does not overcome the deficiencies of Petite.

May relates to “software metering.” More specifically, May states:

Software metering may be utilized, for example, to allow use of software on a “pay as you go” basis. Using a communication path, contact with the computing system is established and terms of the software metering are agreed upon. The communication path is, for example, via a two-way pager, a cellular telephone link or the internet. Alternatively, the communication path can be through a local area network, public telephone system, radio frequency transmission, world wide web, or any other available means of communication. The contact may be initiated, for example, by either the computing system or a remote management information system. The software within the computing system is then activated via the communication path. The activation includes specification to the computing system of parameters for the software metering.

May at col. 2, lines 9-23. May discloses a two-way paging network server 15 in Figure 2, which is illustrated below:

FIGURE 2



Concerning this figure, May states:

A paging network server 15 is connected to telephone system 14. Through two-way paging network server 15, MIS console 11 is able to contact portable computer 16. Use of two-way paging network server 15 has the advantage of making portable computer 16 always available to MIS console 11.

May at col. 4, lines 1-6. May also acknowledges that there may be periods when the portable computer 19 cannot be contacted using the paging network server 14, stating:

A portable computer 19 is not connected to any network and is thus currently unavailable to MIS console 11. Once portable computer 19 is connected to LAN network 22, telephone system 14 and/or paging network server 15, MIS console 11 will be able to access portable computer 19.

May at col. 4, lines 7-11.

With respect to this portion of May, the Office Action asserts that “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the gateway

of Pettit in view of May with the message queue of Allison for the purpose of message flow control. . .” (Office Action, page 5.)

The Office Action also relies on the following of Petite, which states:

It will be appreciated by those skilled in the art that the information transmitted and received by the RF communication devices of the present invention may be further integrated with other data transmission protocols for transmission across telecommunications and computer networks other than the WAN 130. In addition, it should be further appreciated that telecommunications and computer networks other than the WAN 130 can function as a transmission path between the communicatively coupled RF communication devices, the local gateways 110, and the application server 160.

Petite, col. 9, lines 4-14; see also Office Action, p. 3.

The Office Action relies on the above general statement of Petite to support the assertion that “there is a suggestion in Petite for an alternative means to the WAN for communication with the servers.” (Office Action, page 4.) However, simply because Petite provides a generalized statement regarding other communication means, does not mean that the use of a paging network of May would be practical or even possible in Petite. Most importantly, Applicants respectfully submit that if the paging module taught in May were incorporated into the local gateway of Petite, Petite would be rendered unsatisfactory for its intended purpose.

The M.P.E.P. states that “the proposed modification cannot render the prior art unsatisfactory for its intended purpose.” See M.P.E.P § 2143.01 (capitalization altered). The purpose of the Petite reference it to “monitor[], report[], and control[] residential systems via a multiple access wide area network, a gateway, radio-frequency transceivers and repeaters, and software applications...” (Petite, col. 1, lines 30-33.) Accordingly, an intended purpose of Petite is for the gateway to control “residential devices,” such as an interior or exterior lighting system. (Petite, Title and col. 9, lines 20-27.)

It is well known in the art that a pager is a telecommunications device used to request a phone call from a pager subscriber and/or receive simple text communications in the form of e-mail. (Pager, <http://en.wikipedia.org/w/index.php?title=Pager&oldid=175437237> (last visited Dec. 4,

2007) (shown in Exhibit A, attached).) In the United States, pagers typically receive signals over a paging network using the FLEX protocol. (Pager, <http://en.wikipedia.org/w/index.php?title=Pager&oldid=175437237> (last visited Dec. 4, 2007) (shown in Exhibit A, attached).) The FLEX protocol transmits data at speeds of 1.6 kbps to 6.4 kbps. (FLEX (protocol), http://en.wikipedia.org/w/index.php?title=FLEX_%28protocol%29&oldid=169634277 (last visited Dec. 4, 2007) (shown in Exhibit B, attached).) These speeds are substantially lower than a modem that can transmit data at 56 kbps, digital subscriber lines (DSL) that carry data at a rate of 1.5 mbps and cable modems that can transmit data at 10 mbps. (DSL, <http://www.computeruser.com/resources/dictionary/dictionary.html> (last visited Dec. 4, 2007) (shown in Exhibit C, attached) and Cable Modem, <http://www.computeruser.com/resources/dictionary/dictionary.html> (last visited Dec. 4, 2007) (shown in Exhibit D, attached).) Further, devices that are capable of transmitting/receiving pages over a paging network are not constantly connected to a paging network.

Pagers are thus used to send/receive small amounts of data, such as short numeric and alphanumeric messages. In contrast, the local gateways of Petite “communicate information in the form of data and control signals.” If the gateways of Petite were communicating using a paging network, the amount of “data and control signals” that could be transmitted would be substantially reduced or eliminated. For example, Petite relates to “[h]ome automation systems” involving, for example, “a remote command designed to turn on interior lights.” (Petite, col. 2, lines 18-20.) Further, as indicated above, Petite discloses “an exterior lighting system 314 [and] an interior lighting system 316.” (Petite, col. 9, lines 23-24.) Petite states: “[s]ince the local gateways 10 are permanently integrated with the WAN 130, the application server 160 can host application specific software which was typically hosted in an application specific local controller 10 as shown in FIG. 1.” (Petite, col. 8, lines 28-32.) In other words, Petite discloses use of the remote application server for controlling devices, such as a lighting system, for performing functions previously performed by a local controller in the embodiment of Figure 1. Use of a pager network in such a system would

completely disrupt its operation and render it unsatisfactory for its intended purpose. For example, if a homeowner activated a switch to turn on a light and if a pager network were utilized, the consumer may have to wait for a connection to the pager network to be established, wait for transmission of the control signal for turning on the light after the connection is established to the application server, and then wait for re-transmission of the control signal back to the light to be turned on. Even if this delay took only a few seconds, it would be completely unacceptable to consumers who were accustomed to a near-instantaneous response of a light switch. This delay would render the subject matter disclosed in Pettit completely inoperative for its intended purpose.

By way of illustration, inserting a paging network in the communication channels of Petite, such as at the locations identified by the large arrows placed on the Figure 2 of Petite would render the system of Petite unsatisfactory for its intended purpose:

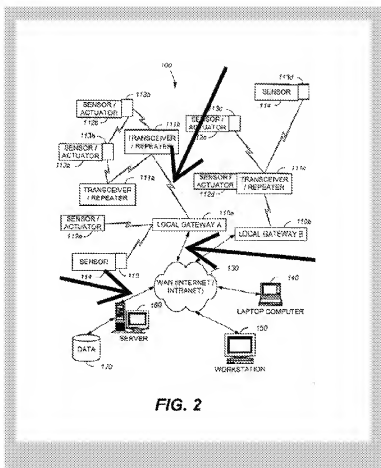


FIG. 2

Also, if the paging network became overwhelmed with messages or data from the application server because of its slow data transmission rates, the delays could become even greater. The May reference itself acknowledges the delays and slow transmission speeds of a pager network.

For example, when contact with MIS console 11 is established using two-way pager interface 53 to make contact through paging network server 15, major downloads of software from MIS console 11 or major uploads of database data from MIS console 11 are not performed.

May at col. 5, lines 41-46. Further, an electronic search of Petite shows that this reference does not even use the word “pager” or “paging.” Clearly, Petite did not contemplate use of a pager network with its attendant delays. Thus, use of a paging network in connection with Petite would render

Pettit inoperative for its intended purpose. Accordingly, the proposed combination of May and Petit is not obvious to one of skill in the art.

The addition of Allison does not overcome the deficiencies of Petite and May. The Office Action merely points to Allison to support the assertion that “Allison teaches a gateway comprising a message queue for storing inbound and outbound messages.” (Office Action, page 4.) The Office Action does not point to, and Applicants cannot find, any teaching or suggestion by Allison of “a one-way paging module in electronic communication with the processor for communicating with a computer through a paging network,” as required by claim 1.

Further, Applicants respectfully submit that the addition of Chatani does not overcome the inadequacies of the previously cited art. The Office Action specifically asserts that Chatani discloses “a paging system and the capability to send and receive large amounts of data.” (Office Action, page 5.) However, Chatani does so by:

a data dividing means for dividing data to be sent in terms of data transmission units to produce divided data, an identification information adding means for adding identification information for identifying the data to be sent to the divided data, a sequence information adding means for adding sequence information to the divided data according to the sequence of the divided data, and a transmission processing means for allotting the divided data to data transmission cycles and sending the divided data. The system for sending and receiving information also includes a receiving means for restoring the sent data based on the identification information and the sequence information added to the divided data sent from the sending means.

Chatani, col 20, line 64 through col. 21, line 9. The disclosed paging system of Chatani is extremely slow transmitting at 1200 bps. (*See, e.g.*, Chatani, col 2, line 65 through col. 3, line 1 (“FIGS. 19A through 19D are diagrams showing a data format for data sent by the broadcasting base station, which employs an NTT (Nippon Telegraph and Telephone Corporation) 1200 bps scheme for a radio pager system.”); and col. 12, line 64 through col. 13, line 21.) Such a system could easily be overwhelmed, resulting in an unacceptable latency. For example, while a four-second delay may be inconsequential when receiving a page or many packets of data for a file to be reassembled by a receiving device, this type of a delay would be unacceptable and unsatisfactory in the case of

controlling residential devices of Petite, such as turning on or off a light switch or changing a channel on a television set. This problem is highlighted by the disclosure of Chatani. If the device of Chatani were used to transmit a large amount of data on a network branch employed by the device of Petite, the network latency would become unacceptable and potentially unacceptable for a long period of time while a large amount of data is transmitted at 1200 bps, as suggested by Chatani. Also, the connection/logon time to enable communication through the paging network would also make the systems of petite unworkably slow as “the local gateways 10 [would no longer be] permanently integrated with the WAN 130 [to enable use of] the application server 160 [to] host application specific software which was typically hosted in an application specific local controller 10 as shown in FIG. 1.” (Petite, col. 8, lines 28-32.) Thus, Applicants respectfully submit that the combination of the paging systems of Chatani with the system of Petite would render Petite unsatisfactory for its intended purpose.

In addition, claim 1 has been amended to recite “wherein a number of the electronic devices that may communicate with the communications module through the wireless module is dynamic,” “a one-way paging module in electronic communication with the processor,” “the memory being programmed to contact the computer whenever the communications module is contacted by one or more of the electronic devices and being programmed to identify one or more of the electronic devices when one or more of the electronic devices contacts the communications module,” and “wherein each inbound message includes a device ID and wherein the memory is further programmed to search the inbound message queue for appropriate inbound messages using the device ID for one or more of the electronic devices and to transmit the appropriate inbound messages to one or more of the electronic devices.” Support for amendments to claim 1 is provided, for example, at page 3, lines 22-29; page 4, lines 12-13; page 7, lines 3-8; page 14, lines 17-27; and original claims 5, 23, and 55 of the specification.

In view of the foregoing, Applicants respectfully submit that claim 1 is patentably distinct from the cited references. Accordingly, Applicants respectfully request that the rejection of claim 1

be withdrawn because Petite, alone or in combination with May, Allison and Chatani, does not teach or suggest all of the subject matter of claim 1.

Claims 2-4, 6, 8, 10-12, 15, 17, 19-21, and 24 depend either directly or indirectly from claim 1. Claims 5, 22 and 23 have been cancelled. Accordingly, Applicants respectfully request that the rejection of claims 2-4, 6, 8, 10-12, 15, 17, 19-21, and 24 be withdrawn.

Claim 25 has been amended to recite “wherein a number of the electronic devices that may communicate with the communications module through the wireless module is dynamic,” “a one-way paging module in electronic communication with the processor,” “the memory being programmed to contact the computer whenever the communications module is contacted by one or more of the electronic devices and being programmed to identify one or more of the electronic devices when one or more of the electronic devices contacts the communications module,” and “wherein each inbound message includes a device ID and wherein the memory is further programmed to search the inbound message queue for appropriate inbound messages using the device ID for one or more of the electronic devices and to transmit the appropriate inbound messages to one or more of the electronic devices.” As discussed above, Petite, alone or in combination with May, Allison and Chatani, does not teach or suggest this claimed subject matter. Accordingly, Applicants respectfully submit that claim 25 is allowable. Claims 29 and 37-38 have been cancelled. Claims 26-28, 30-31, 33, 35-36 and 41-42 depend either directly or indirectly from claim 25, and are therefore allowable for at least the same reasons.

Claim 43 has been amended to recite “wherein a number of the electronic devices that may communicate with the communications module through the wireless module is dynamic,” “a one-way paging module in electronic communication with the processor,” “the memory being programmed to contact the computer whenever the communications module is contacted by one or more of the plurality of electronic devices and being programmed to identify one or more of the electronic devices when one or more of the electronic devices contacts the communications module,” and “wherein each inbound message includes a device ID and wherein the memory is further programmed to search the inbound message queue for appropriate inbound messages using the

device ID for one or more of the electronic devices and to transmit the appropriate inbound messages to one or more of the electronic devices.” As discussed above, Petite, alone or in combination with May, Allison and Chatani, does not teach or suggest this claimed subject matter. Accordingly, Applicants respectfully submit that claim 43 is allowable. Claims 54-55 have been cancelled. Claims 44-49, 51, 53 and 58 depend either directly or indirectly from claim 43, and are therefore allowable for at least the same reasons.

Claim 59 has been amended to recite “wherein a number of the electronic devices that may communicate with the communications module through the wireless module is dynamic,” “a one-way paging module in electronic communication with the processor,” “the memory being programmed to contact the computer whenever the communications module is contacted by one or more of the electronic devices and being programmed to identify one or more of the electronic devices when one or more of the electronic devices contacts the communications module,” “wherein each inbound message includes a device ID,” “searching the inbound message queue for appropriate inbound messages using the device ID for one or more of the electronic devices,” and “sending one or more of the inbound messages to one or more of the electronic devices;” As discussed above, Petite, alone or in combination with May, Allison and Chatani, does not teach or suggest this claimed subject matter. Accordingly, Applicants respectfully submit that claim 59 is allowable. Claims 68-69 have been cancelled. Claims 60-67 depend either directly or indirectly from claim 59, and are therefore allowable for at least the same reasons.

Claim 70 has been amended to recite “wherein a number of the electronic devices that may communicate with the communications module through the wireless module is dynamic,” “a one-way paging module in electronic communication with the processor,” “the memory being programmed to contact the computer whenever the communications module is contacted by one or more of the electronic devices and being programmed to identify one or more of the electronic devices when one or more of the electronic devices contacts the communications module,” and “wherein each inbound message includes a device ID and wherein the memory is further programmed to search the inbound message queue for appropriate inbound messages using the

device ID for one or more of the electronic devices and to transmit the appropriate inbound messages to one or more of the electronic devices.” As discussed above, Petite, alone or in combination with May, Allison and Chatani, does not teach or suggest this claimed subject matter. Accordingly, Applicants respectfully submit that claim 70 is allowable.

Claim 71 has been amended to recite “wherein a number of the electronic devices that may communicate with the communications module through the wireless module is dynamic,” “a one-way paging module in electronic communication with the processor,” “the memory being programmed to contact the computer whenever the communications module is contacted by one or more of the electronic devices and being programmed to identify one or more of the electronic devices when one or more of the electronic devices contacts the communications module,” and “wherein each inbound message includes a device ID and wherein the memory is further programmed to search the inbound message queue for appropriate inbound messages using the device ID for one or more of the electronic devices and to transmit the appropriate inbound messages to one or more of the electronic devices.” As discussed above, Petite, alone or in combination with May, Allison and Chatani, does not teach or suggest this claimed subject matter. Accordingly, Applicants respectfully submit that claim 71 is allowable.

II. New Claims

New claims 72-73 have been added and are fully supported by the specification. These claims depend from claim 25. Accordingly, these claims are allowable for the same reasons put forth above in conjunction with the independent claims.

III. Conclusion

Applicants respectfully assert that all pending claims are patentably distinct from the cited references, and request that a timely Notice of Allowance be issued in this case. If there are any remaining issues preventing allowance of the pending claims that may be clarified by telephone, the Examiner is requested to call the undersigned.

Respectfully submitted,

/Wesley L. Austin/

Wesley L. Austin
Reg. No. 42,273
Attorney for Applicant

Date: September 4, 2009

AUSTIN RAPP & HARDMAN
170 South Main Street, Suite 735
Salt Lake City, Utah 84101
Telephone: (801) 537-1700

Appl. No. 09/922,813
Amdt. dated September 4, 2009
Reply to Office Action of June 4, 2009

EXHIBITS
EXHIBITS A-D

Appl. No. 09/922,813
Amdt. dated September 4, 2009
Reply to Office Action of June 4, 2009

EXHIBIT A

(Exhibit A includes 5 pages including cover page)

Pager

From Wikipedia, the free encyclopedia

This is an old revision of this page, as edited by RandalSchwartz (Talk | contribs) at 07:59, 3 December 2007. It may differ significantly from the current revision.

(diff) ← Older revision | current version (diff) | Newer revision → (diff)

A **pager** (sometimes referred to as a *Beeper*) is a personal telecommunications device used to request a phone call from a pager subscriber and/or receive simple text communications in the form of e-mail and SMS. Pagers exist as one-way numeric and alphanumeric models that only receive incoming communications and as two-way alphanumeric models capable of sending e-mails and SMS messaging.

Until the popular adoption of mobile phones in the late 1990s, pagers fulfilled the role of common personal and mobile communications. As of 2007, pagers have fallen into obsolescence and are preserved only by niche markets consisting largely of emergency service personnel, medical personnel, and information technology support staff.

Contents

- 1 History
- 2 Function and operation
- 3 Pager use in the 21st century
- 4 Security
- 5 Technical information
- 6 See also
- 7 External links

History

Paging was invented by Multitone Electronics in 1956 at St Thomas' Hospital in London to alert doctors attending emergencies. Since then, paging has evolved in sophistication. Today, millions of messages are transmitted to people needing fast, reliable messaging communications.

In the world of paging there are two distinct categories of system in operation. There are on-site paging systems that are used in hospitals to convey the same urgent information as when they were invented in 1956. The other type is wide area paging, which offers similar features as on-site paging, but provides the radio coverage across a city, region or country rather than in just one hospital building.

Originally operating on AM radio frequencies, paging moved to FM schemes prior to becoming a ubiquitous form of communications around the developed and developing world. In some cases, before the advent of cellular phone systems the pager was used as a replacement for a lack of cheap local or international phone services.

Function and operation

Paging is a subscription service offered in a variety of plans and options to meet the needs of a subscriber and the type of device used. In general, all pagers are given unique phone numbers while **alphanumeric pagers** are given an e-mail address, usually consisting of the phone number.

Upon calling a phone number assigned to a pager, the calling party reaches a recorded greeting asking the caller to enter a numeric message, and sometimes giving the caller an option to leave voice mail. Usually, within a few minutes, the paged person will receive an alert from the pager with the phone number to return the call and/or a pager code. In the case of e-mail paging, the text is be displayed.

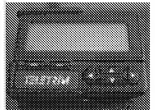
- **Numeric pagers** are the simplest of the type of devices offering only a numeric display of the phone number to be called and pager codes
- **Alphanumeric pagers** are essentially modified versions of numeric pagers with sophisticated display to accommodate text. These devices are usually given an e-mail address to receive text messages.
- **Two-way Alphanumeric pagers** are alphanumeric pagers with the ability to send text messages typed in with a small keyboard.

Most modern paging systems use simulcast delivery by satellite controlled networks. This type of distributed system makes them inherently more reliable than terrestrial based cellular networks for message delivery. Many paging transmitters may overlap a coverage area, while cellular systems are built to fill holes in existing networks. When terrestrial networks go down in an emergency, satellite systems continue to perform. Because of superior building penetration and availability of service in disaster situations, pagers are often used by first responders in emergencies.

Pager use in the 21st century



The front end of a numeric pager



A Motorola alphanumeric pager used in Brazil in the 1990s, operated by Teletim

Pagers are still in use today in places where mobile phones typically cannot reach users, and also in places where the operation of the radio transmitters contained in mobile phones is problematic or prohibited. One such type of location is a large hospital complex, where cellular coverage is often weak or nonexistent, where radio transmitters are suggested to interfere with sensitive medical equipment and where there is a greater need of assurance for a timely delivery of a message.

Some common environments in which pagers are still used are:

- Pagers remain in use to notify emergency personnel. For example, they are required to be used by UK lifeboat men and retained firefighters.
- Pagers are mostly carried by staff in medical establishments, allowing them to be summoned to emergencies.
- Pagers are also widely used in the IT world, especially in cases where on-call technicians cannot rely on more modern cellular telephone systems. A good example would be in a cellular telephone company, where a service interruption in the cellular network would also mean that it would not be possible to notify a technician due to the outage in the network. Therefore, in these companies, engineers are usually equipped with a pager that uses another telco's mobile network to ensure reachability in case of emergency. Pagers are also frequently used by non-telco IT departments.

Additionally, some irrigation control systems and traffic signals are now controlled by messages sent via paging networks. Due to energy concerns in the United States and other countries, 2Way paging networks are being used for power company meter reading and control.

Security

Pagers also have privacy advantages compared with cellular phones. Since a one-way pager is a passive receiver only (it sends no information back to the base station), its location cannot be tracked. However, this can also be disadvantageous, as a message sent to a pager must be broadcast from every paging transmitter in the pager's service area. Thus, if a pager has nationwide service, a message sent to it could be intercepted by criminals or law enforcement agencies anywhere within the nationwide service area.

Technical information

Many paging network operators now allow numeric and textual pages to be submitted to the paging networks via email. This is convenient for many users, due to the widespread adoption of email; but email-based message submission methods do not usually provide any way to ensure that messages have been received by the paging network. This can result in pager messages being delayed or lost. Older forms of message submission using the Telocator Alphanumeric Input Protocol protocol involve modem connections directly to a paging network, and are less subject to these delays. For this reason, older forms of message submission retain their usefulness for disseminating highly-important alerts to users such as emergency services personnel.

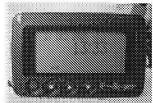
Common paging protocols include TAP, FLEX, ReFLEX, POCSAG, Golay, ERMES and NTT. Past paging protocols include Two-tone and S/6-tone.

In the United States, pagers typically receive signals using the FLEX protocol in the 900 MHz band. Commercial paging transmitters typically radiate 1000 watts of effective power, resulting in a much wider coverage area per tower than a mobile phone transmitter, which typically radiates around 0.6 Watts per channel.

Although 900 MHz FLEX paging networks tend to have stronger in-building coverage than mobile phone networks, commercial paging service providers will work with large institutions to install repeater equipment in the event that service is not available in needed areas of the subscribing institution's buildings. This is especially critical in hospital settings where emergency staff must be able to reliably receive pages in order to respond to patient needs.

Unlike mobile phones, most one-way pagers do not display any information about whether a signal is being received or about the strength of the received signal. Since one-way pagers do not contain transmitters, one-way paging networks have no way to track whether a message has been successfully delivered to a pager. Because of this, if a one-way pager is turned off or is not receiving a usable signal at the time a message is transmitted, the message will never be received and the sender of the message will not be notified of this fact.

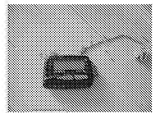
Other radio bands used for pagers include the 400 MHz band, the VHF band, and the FM commercial broadcast band (88-108 MHz). Other paging protocols used in the VHF, 400 MHz UHF, and 900 MHz bands include POCSAG and ERMES. Pagers using the commercial FM band receive a subcarrier, called the Subsidiary Communications Authority, of a broadcast station.



A Skyper pager that is in use for HAM Radio



A pager that is in use for emergency services



A mid '90s opaque black Avont pager model

See also

- Alfred J. Gross
- Plectron
- Motorola Minitor Voice Pager

External links

- MULTITONE ELECTRONICS Inventors & manufacturers of paging systems (<http://www.multitone.com/>)
- BBC news reports closure of UK domestic pager systems in 2001 (<http://news.bbc.co.uk/1/hi/uk/1137923.stm>)
- POCSAG and FLeX pager gallery (<http://www.starboy.ru/pagers/pagers.html>)

Retrieved from "<http://en.wikipedia.org/wiki/Pager>"

Categories: Articles lacking sources from November 2007 | All articles lacking sources | Consumer electronics | Wireless communications | Mobile telephony | Telecommunications equipment

-
- This version of the page has been revised.

Besides normal editing, the reason for revision may have been that this version contains factual inaccuracies, vandalism, or material not compatible with the GNU Free Documentation License.

Appl. No. 09/922,813
Amdt. dated September 4, 2009
Reply to Office Action of June 4, 2009

EXHIBIT B

(Exhibit B includes 2 pages including cover page)

FLEX (protocol)

From Wikipedia, the free encyclopedia

This is an old revision of this page, as edited by 208.42.94.149 (Talk) at 17:29, 6 November 2007. It may differ significantly from the current revision.

(diff) ← Older revision | current version (diff) | Newer revision → (diff)

FLEX is a communication protocol developed by Motorola and used in many pagers. FLEX provides one-way communication only (from the provider to the pager device), but a related protocol called ReFLEX provides two-way messaging.

Transmission of message data occurs in one of four modes: 1600/2, 3200/2, 3200/4, or 6400/4. All modes use FSK modulation. At 1600/2 this is on a 2 level FSK signal transmitted at 1600 bits per second. At 3200/2, this is a 2 level FSK signal transmitted at 3200 bits per second. At 3200/4, this is a 4 level FSK signal transmitted at 1600 symbols per second. Each 4 level symbol represents two bits for a bit rate of 3200 bits per second. At 6400/2, this is a 4 level FSK signal transmitted at 3200 symbols per second or 6400 bits per second.

Data is transmitted in a set of 128 frames that takes 4 minutes to complete. Each frame contains a sync followed by 10 data blocks. The data blocks contain 256, 512 or 1024 bits for 1600, 3200 or 6400 bits per second respectively.

A BCH type ECC is used to improve the integrity of the data. The standard has been designed to allow the pager's receiver to be turned off for a high percentage of the time and therefore save on battery usage.

Retrieved from "http://en.wikipedia.org/wiki/FLEX_%28protocol%29"

Categories: Mobile | Wireless stubs

-
- This version of the page has been revised.
Besides normal editing, the reason for revision may have been that this version contains factual inaccuracies, vandalism, or material not compatible with the GNU Free Documentation License.

Appl. No. 09/922,813
Amdt. dated September 4, 2009
Reply to Office Action of June 4, 2009

EXHIBIT C

(Exhibit C includes 2 pages including cover page)


[Articles](#) | [PR](#) | [Videos](#) | [Education](#) | [Blogs](#)

Search

Get it!

[CU](#) [Web](#)
[Home](#) [Articles](#) [UserTV](#) [Press Releases](#) [Dictionary](#) [Books](#) [Education](#) [Careers](#) [B-Channels](#) [Resources](#) [Forums](#) [Blogs](#) [Classifieds](#)

Thursday 20 Dec, 2007

[eNewsletter](#)
[Register](#)
[Login](#)

Dictionary

The Most Comprehensive High-Tech Dictionary on the Internet!

[Random Words](#)
[Recent Words](#)
[Add New Word](#)
[Tech Word Search](#)
[My Words](#)

Tech Panel >

[Y2K Terms](#)
[Emoticons](#)
[Chat Stuff](#)
[HTML Tags](#)
[File Types](#)
[Domains](#)
[Virus Terms](#)
[Communications](#)
[Electronics](#)
[Hardware](#)
[Networking/Security](#)
[Software](#)
[Programming](#)
[OpenSource](#)
[Database](#)
[Internet](#)
[Wireless](#)
[Mobile Computing](#)
[Graphics](#)
[Multimedia](#)
[Gadgets](#)
[Others](#)
[VOIP](#)
[Adobe](#)
[Apple Mac](#)
[Autodesk](#)
[Cisco](#)
[Citrix](#)
[Google](#)
[IBM](#)
[Microsoft](#)
[Oracle](#)
[PHP](#)
[SUN](#)
[Imac](#)
[Search Tips](#)

DSL

search

Random Terms

Recent Words

Words

Definition

DSL

Digital Subscriber Line or Digital Subscriber Loop. A technology which enables high-speed transmission of digital data over regular copper telephone lines. See also HDSL and ADSL.

DSL Access Multiplexer (DSLAM)

Digital Subscriber Line Access Multiplexer (DSLAM). A mechanism used by the phone company to link customers' DSL connections to a single high-speed ATM line.

DSLAM: Digital Subscriber Line Access Multiplexer

Digital Subscriber Line Access Multiplexer (DSLAM) is a device that aggregates many customer DSL connections to a single high-speed ATM line to the backbone network. When the phone company receives a DSL signal, an ADSL modem with a POTS splitter detects voice calls and data. Voice calls are sent to the PSTN, and data are sent to the DSLAM, where it passes through the ATM to the Internet, then back through the DSLAM and ADSL modem before returning to the customer's PC.

DSL - digital subscriber line

Digital subscriber lines carry data at high speeds over standard copper telephone wires. With DSL, data can be delivered at a rate of 1.5 mbps (around 30 times faster than through a 56-kbps modem).

Random Words

Word : customer support

Explanation : Service for customers that is provided by computer vendors and hardware and software manufacturers

Word : Gregorian calendar

Explanation : The calendar used in most countries of the world, which has 12 months and 365 days a year (except for leap years). It is a modified version of the Julian calendar, and was introduced by Pope Gregory XIII in 1582. (See leap year.)



INDEX

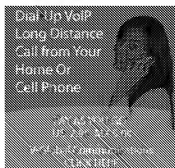
A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X
Y	Z	0	1	2	3	4	5
6	7	8	9				
!	@	#	\$	%	^	&	-
;	:	/	()	{}	<>	-	
=							

Tech Word for Today

Word : Gregorian calendar

Explanation : The calendar used in most countries of the world, which has 12 months and 365 days a year (except for

More...



Copyright © 1997-2007 ComputerUser Inc.

[About us](#) | [Terms of use](#) | [Privacy Policy](#) | [Legal](#) | [Trademark/Copyright](#) | [Awards](#) | [Advertise](#) | [White guidelines](#) | [Statistics](#) | [Contact](#) | [FAQs](#) | [Feedback](#) | [Link to us](#)

Here are the topics we cover: computer certification computer careers computer training computer games consulting data recovery data security digital entertainment emerging technology gadget reviews handheld computers hardware reviews home automation home networks home office how-to advice Internet Linux local companies local news local profiles Macintosh MP3 players network security online music online security open-source small-business technology SOHO software reviews technology books technology dictionary VPN Web site reviews Wi-Fi Windows wireless technology

Register with ComputerUser today. As a register user you get access to Tech Articles, Tech News, Press Releases, Tech Dictionary, Education Resources, Career Solutions, Forums, Create your own blogs etc...

Appl. No. 09/922,813
Amdt. dated September 4, 2009
Reply to Office Action of June 4, 2009

EXHIBIT D

(Exhibit D includes 2 pages including cover page)



Articles | PR | Videos | Education | Blogs

Search

Get It

CU Web

Home Articles UserTV Press Releases Dictionary Books Education Careers B-Channels Resources Forums Blogs Classifieds

Thursday 20 Dec, 2007

eNewsletter Register Login

Dictionary

The Most Comprehensive High-Tech Dictionary on the Internet!

Random Words
Recent Words
Add New Word
Tech Word Search
My Words

Tech Panel

Y2K Terms
Emoticons
Chat Stuff
HTML Tags
File Types
Domains
Virus Terms
Communications
Electronics
Hardware
Networking/Security
Software
Programming
OpenSource
Database
Internet
Wireless
Mobile Computing
Graphics
Multimedia
Gadgets
Others
VOIP
Adobe
Apple Mac
Autodesk
Cisco
Citrix
Google
IBM
Microsoft
Oracle
PHP
SUN
Imac
Search Tips

Word

Definition

cable modem

A cable modem is an external device that hooks up to your computer and instead of getting an internet connection through your telephone wire (or another system), you get a connection through your cable network (same place your cable TV connection comes from). Cable modems translate radio frequency (RF) signals to and from the cable plant into Internet Protocol (IP), the communications protocol spoken by all computers connected to the internet. Cable modems are designed to take advantage of the broadband cable infrastructure enabling peak connection speeds over 100 times faster than traditional dial-up connections.

Cable Modem

Cable modem provides access of computers to network over cable TV lines. Most cable modems supply a 10 Mbps Ethernet connection for the home LAN. Cable modem achieve higher access speed to the World-Wide Web than phone lines using dial up modem or even ADSL modem. The actual performance of a cable modem internet connection can vary depending on the utilization of the shared cable line in that neighborhood, but typical data rates range from 300 Kbps to 1500 Kbps.

Random Words

Word: CIR

Committed **I**nformation **R**ate. The minimum transmission speed between computers in a frame relay network.

Word: Gregorian calendar

Explanation: The calendar used in most countries of the world, which has 12 months and 365 days a year (except for leap years). It is a modified version of the Julian calendar, and was introduced by Pope Gregory XIII in 1582. (See leap year.)



INDEX

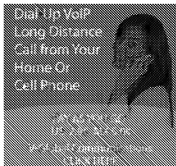
A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X
Y	Z	0	1	2	3	4	5
6	7	8	9				
!	@	#	\$	%	^	&	-
;	:	/	()	{}	<	>	-
=							

Tech Word for Today

Word: Gregorian calendar

Explanation: The calendar used in most countries of the world, which has 12 months and 365 days a year (except for

More...



Copyright © 1997-2007 ComputerUser Inc.

About us | Terms of use | Privacy Policy | Legal | Trademark/Copyright | Awards | Anwarise | White guidelines | Startup | Contact | FAQ's | Feedback | Link to us

Here are the topics we cover: computer certification computer careers computer training computer games consulting data recovery data security digital entertainment emerging technology gadget reviews handheld computers hardware reviews home automation home networks home office how-to advice Internet Linux local companies local news local profiles Macintosh MP3 players network security online music online security open-source small-business technology SOHO software reviews technology books technology dictionary VPN Web site reviews Wi-Fi Windows wireless technology

Register with ComputerUser today. As a register user you get access to Tech Articles, Tech News, Press Releases, Tech Dictionary, Education Resources, Career Solutions, Forums, Create your own blogs etc...